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LETTER TO EDITOR

MOLECULAR EPIDEMIOLOGY OF A MEASLES VIRUS IN SAO PAULO, BRAZIL: AN IMPORTED CASE

Sao Paulo, March 27, 2013

Dear Sir,

Brazil follows the recommendations of the World Health Organization concerning the use of several strategies of measles vaccination programs and has succeeded in reducing transmission of the wild-type viruses. Sao Paulo State follows the same pattern; however, there was circulation of an imported case of virus in 2001 and 2005, which was shown to belong to the D5 group and in 2011 to the D4 group[3]. In 2012 there were no reports of confirmed measles cases.

In Sao Paulo on 12.23.2012, Epidemiological Surveillance Center notified a suspected case of measles virus of a 20-year-old male, living in the city of Bauru/SP, with a history of international travel to Florida, USA. The patient had previously received two doses of measles vaccine. When returning to SP/Brazil he presented the first symptoms on 12.25.2012, with fever followed by rash, cough, coryza, conjunctivitis, diarrhea and prostration. Samples were collected on 01.02.2013. The Adolfo Lutz Institute (SP) processed samples by using ELISA assay measles-specific immunoglobulin (IgM/IgG) and Real Time PCR assays, which confirmed the presence of measles virus.

Phylogenetic analysis of measles virus wild type strain has been used to trace the routes of transmission and circulation. We used the region encoding the nucleoprotein (N), that presents variability from 7% to 12% among wild-type viruses. For molecular epidemiology, genotype designations are considered the operational taxonomic unit, while related genotypes are grouped by eight clades designated A, B, C, D, E, F, G and H. Within these clades, there are 23 recognized genotypes[6].

Our result indicated that the virus was a member of genotype D8. This patient had contact with two persons, a 20-year-old female and a 13-year-old male who had previously received two doses of measles vaccine, and who received a third dose on 01.02.2013, developing measles symptoms on 01.08.2013. Samples were collected on 01.11.2013. Results showed IgM no reagent and IgG reagent for the two patients' contacts**.** Real Time PCR assay confirmed measles virus and sequencing was processed showing Genotype D8. This genotype has circulated in England and has been detected in other countries including the USA, Canada and China[2,4,7].

Although patients had received two doses of vaccine, several obstacles to eradicate measles should be considered such as the persistent infection with transmissible measles virus which poses a biological barrier to its eradication[5]. However, such cases should always be monitored to assure that contacts remain uninfected[1]. The air travelling passengers were also contacted to initiate preventive measures against the virus.

To maintain good measles control, children should be vaccinated against measles at the right time through routine childhood immunization; likewise, all young adults who travel internationally should be vaccinated as well. Clinician awareness remains important for the early identification and control of measles to avoid further transmission during outbreaks and to enable the timely implementation of public health measures.

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